



DTE Energy[®]
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DTE Energy Pilot Programs DTE Insight & Retro-Commissioning

MPSC Collaborative – Joint Workgroup

April 21, 2015



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DTE Energy Pilot Program DTE Insight

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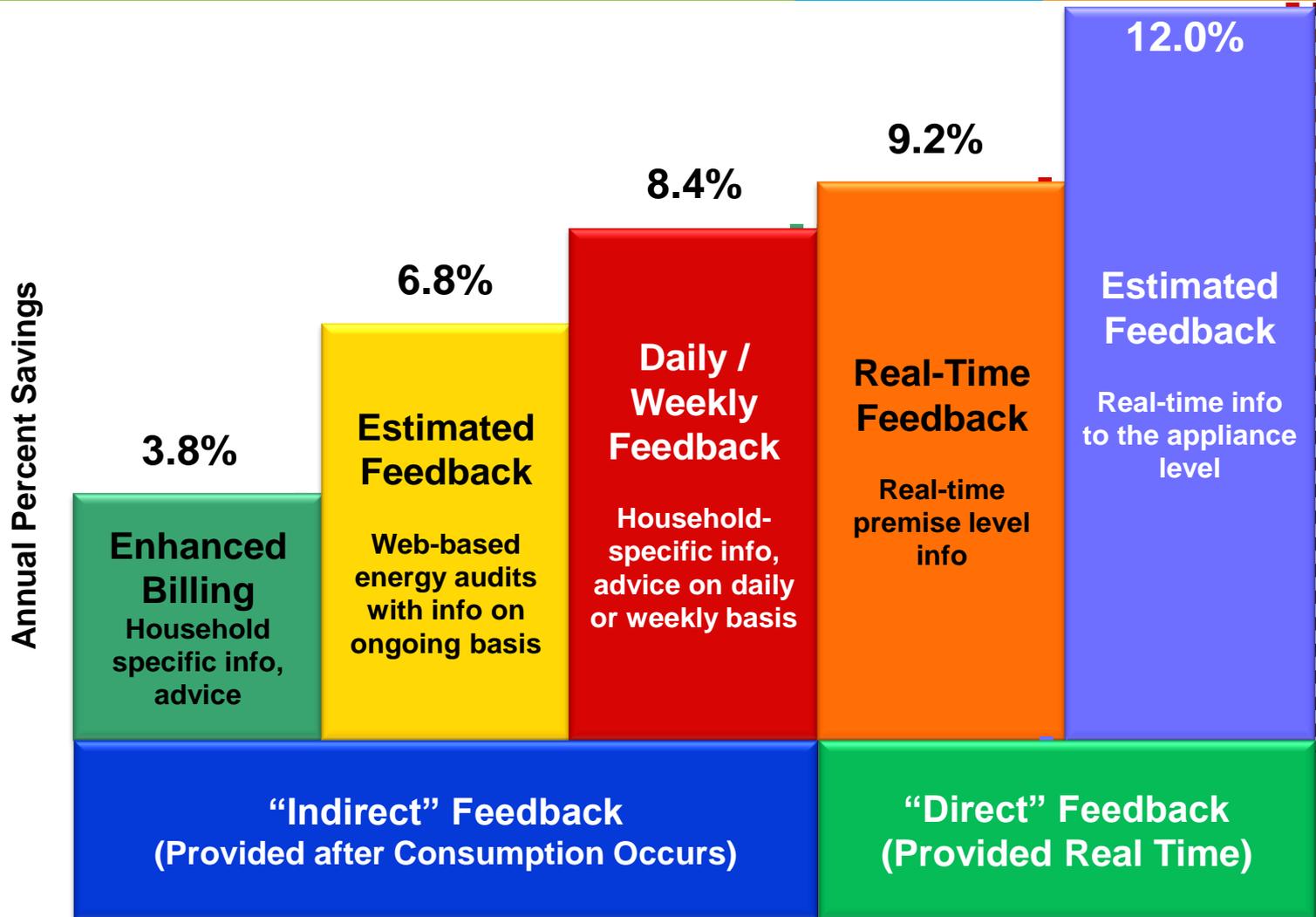
DTE Insight mobile app was launched in 2014 and will be a core platform to help our customers manage their energy consumption and their homes



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- DTE Energy is the first utility to offer an interactive real-time mobile application tool for customers to understand their energy usage
- The customer experience as well as the software and hardware were all developed and provided locally with Vectorform LLC, Saline Lectronics Inc. and our residential customers



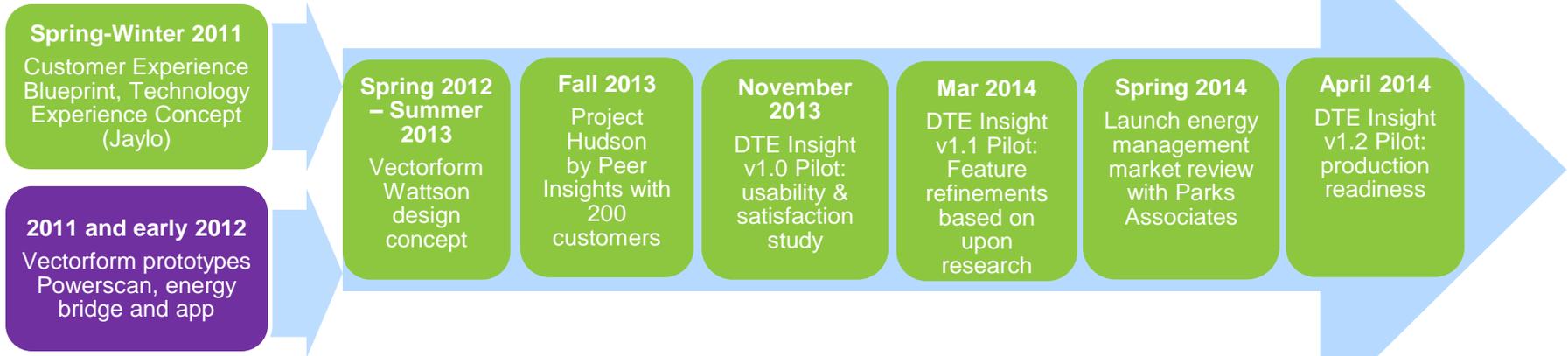
Based on 36 studies implemented between 1995-2010

The customer experience of DTE Insight was co-created with our residential customers in a rigorous and iterative design process

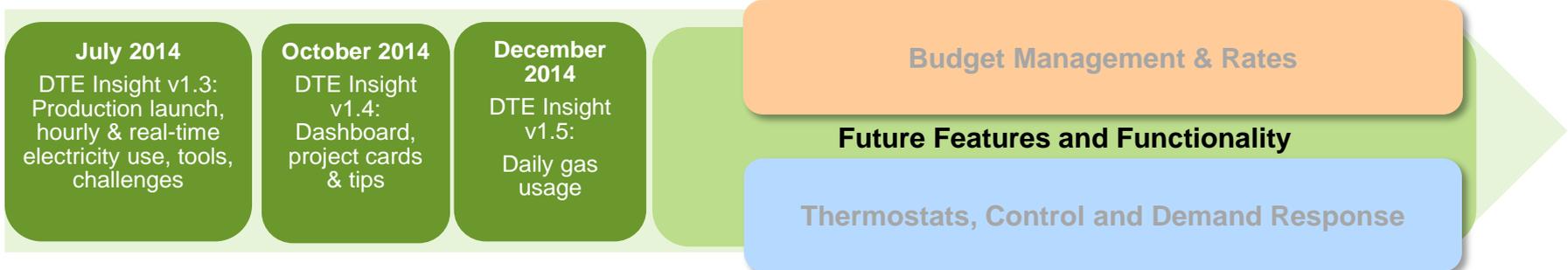


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Pre-launch Research and Development



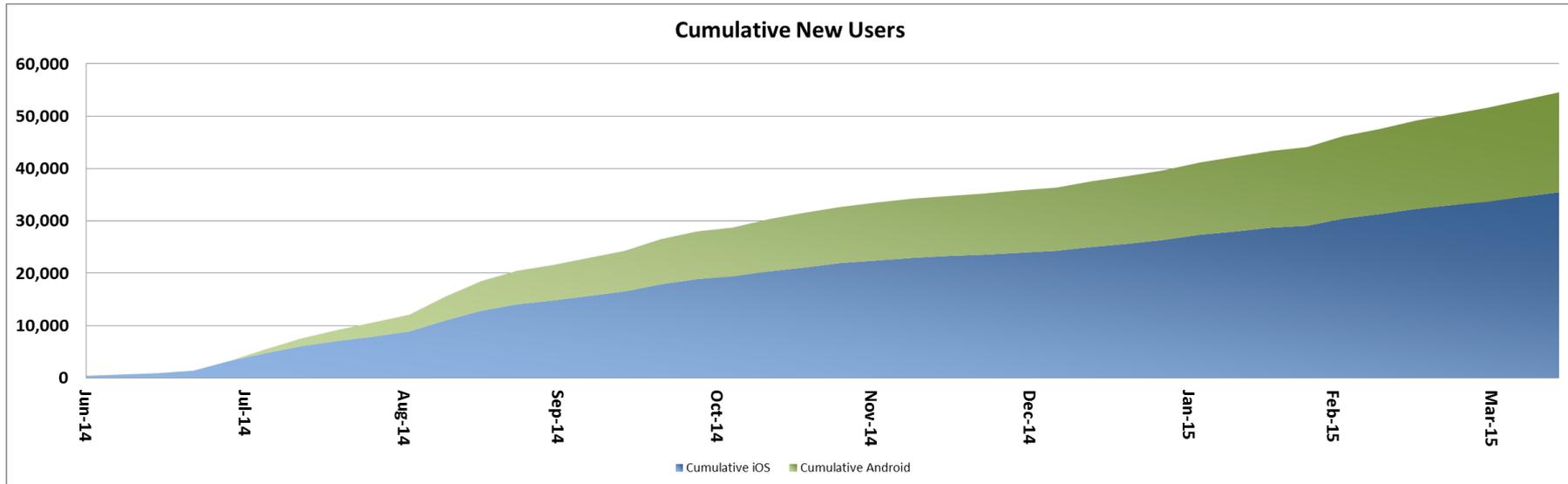
Post Launch Roadmap



DTE Insight
Over 50,000 Downloads
Over 10,000 Energy Bridge Requests



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- App downloads –far exceeding our original goals and expectations of 10,000 in 2014 – 2015 goal of 150,000
- Energy Bridge requests have shown strong demand – 2015 goal of 35,000
- Continue to focus on customer engagement to drive higher energy savings

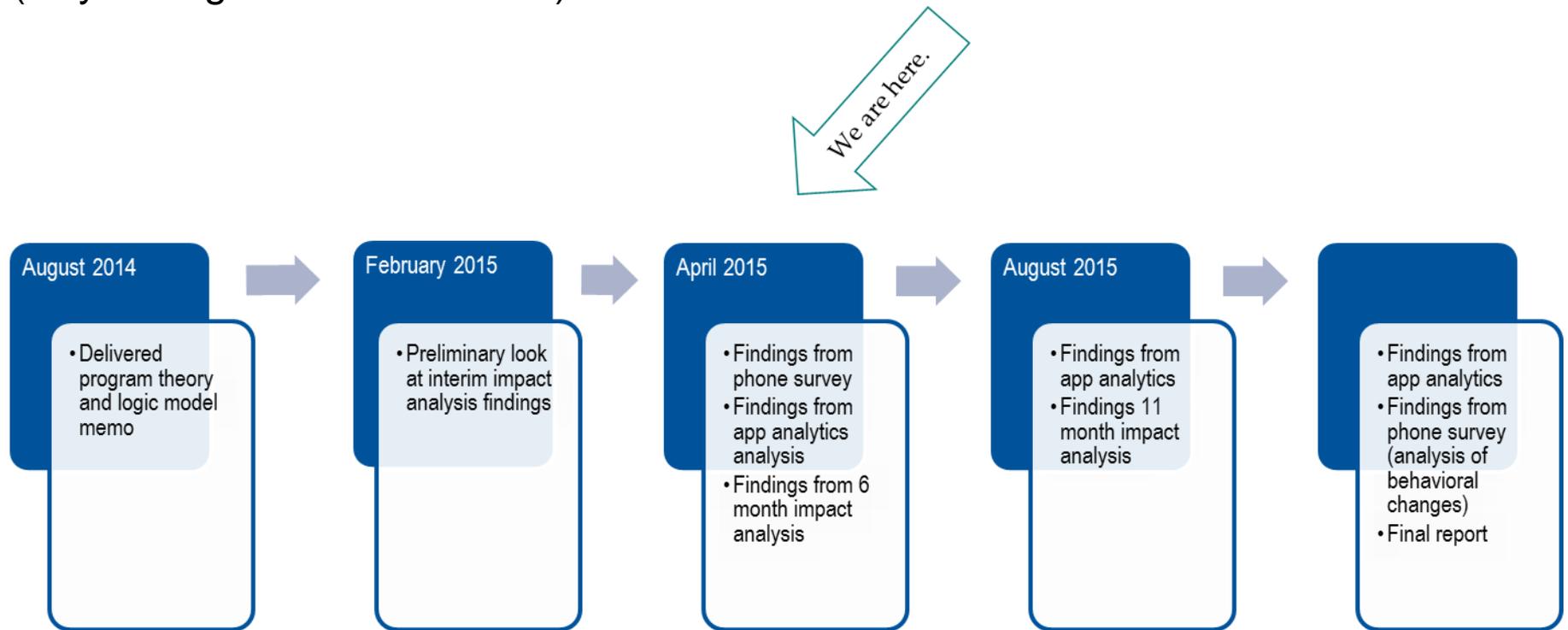


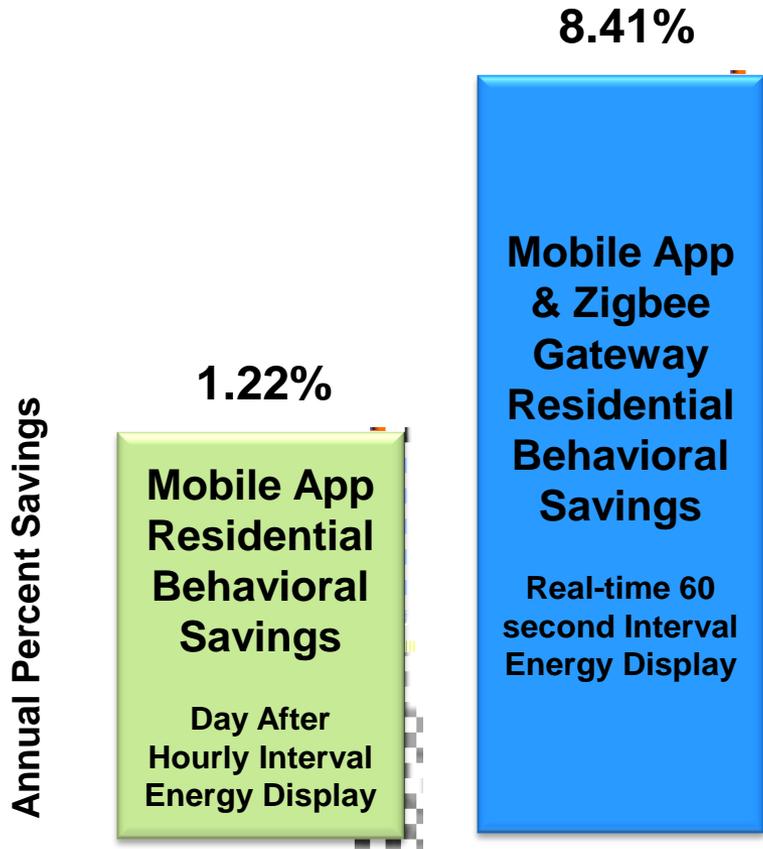
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DTE Insight Demonstration



Analysis of electric savings resulting from the first 6 months of the DTE Insight Pilot (July through December 2014).





- 6 Month Impact Analysis Findings
- EM&V Analysis is on-going
- Results are in line with ACEEE Report
Advanced Metering Initiatives and Residential Feedback Programs: A Meta Review for Household Electricity-Saving Opportunities; June 2010 --- ACEEE Report Number E105
- Program Planning is underway to commercialize the Pilot as a Residential Behavior Program
- Submission of proposed Measures for inclusion to the 2016 MEMD



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Thank You!

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DTE Energy Pilot Programs Retro-Commissioning

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Retro-Commissioning Pilot Program Overview



What is Retro-Commissioning?

- Retro-commissioning (RCx) is a systematic process to improve an existing building's performance through the identification of operational improvements that will increase occupant comfort and save energy.
- Depending on the age of the building, RCx can often resolve problems that occurred during design or construction, or address problems that have developed throughout the building's life.
- Target energy savings are between 4 – 6 %.



What is DTE Energy offering?

- **Fully funded** (free) retro-commissioning (RCx) study to their commercial and industrial customers.

How is it offered?

- An expert engineering team **identifying no/low cost energy saving measures** with a total simple **project payback period of 18 months** or less.
- Customers implement the energy saving measures of their choice to meet the minimum program spend requirement (varies between RCx Lite and RCx Standard).
- Energy savings are validated through measurement and verification (funded by the Program).

Customer walks away with a detailed energy assessment at no cost to them, a more efficient building, and cost savings even after the project has paid for itself.



Program Qualifications

RCx Lite

- Commercial buildings/facilities
- Between 50,000 - 150,000 square feet
- Peak demand between 125 – 500 kW *ideal 300-1000kW
- *Willing to spend a minimum of \$3,500 on energy efficiency recommendations*
- Assessment Value (Service Provider Fee): Up to \$7,000

RCx Standard

- Commercial and Industrial buildings/facilities
- Greater than 150,000 square feet
- Peak demand greater than 500 kW *ideal >1000kW
- *Willing to spend a minimum of \$15,000 on energy efficiency recommendations*
- Assessment Value (Service Provider Fee): Up to \$40,000



Project Timeline: RCx Lite vs. Std

RCx Lite (4 months)

- Application & Kick-off meeting: 3 weeks
- Investigation & Implementation Phase: 9 weeks
- Verification: 5 weeks

RCx Standard (10 months)

- Application & Kick-off meeting: 1 month
- Investigation: 4 - 5 months
- Implementation: 4 - 5 months
- Verification: 1 month

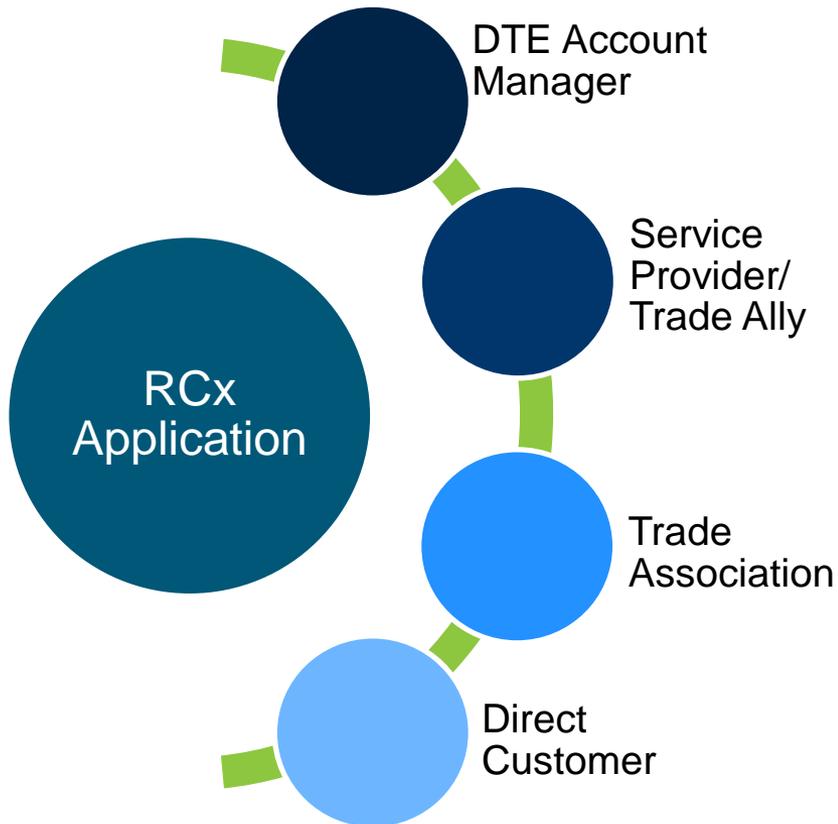


Program Process





Outreach Key Strategies



Target Market Segments

- Commercial
- Hospital
- Hotel
- Educational Facilities
- Grocery
- Retail

DTE RCx Pilot Program



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SIC Category	Lite or Standard	Gas Provider	Phase
EDUCATIONAL SERVICES	Lite	DTE Gas	INV
AMUSEMENT & RECREATION SERVICES	Lite	DTE Gas	INV
AMUSEMENT & RECREATION SERVICES	Lite		INV
SERVICES, (NOT ELSEWHERE CLASSIFIED)	Lite		INV
SOCIAL SERVICES	Lite	DTE Gas	VER
HOTELS AND OTHER LODGING PLACES	Lite	DTE Gas	INV
EDUCATIONAL SERVICES	Lite	DTE Gas	INV
AMUSEMENT & RECREATION SERVICES	Lite		App review
AMUSEMENT & RECREATION SERVICES	Std	DTE Gas	IMP
EDUCATIONAL SERVICES	Std	DTE Gas	INV
EDUCATIONAL SERVICES	Std	DTE Gas	INV
EDUCATIONAL SERVICES	Std	DTE Gas	INV
TRANSPORTATION EQUIPMENT	Std	DTE Gas	INV
TRANSPORTATION EQUIPMENT	Std	DTE Gas	INV
EDUCATIONAL SERVICES	Std		App Review

Retro-Commissioning Pilot Program Overview



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Electric ECMs and Energy Savings		
Measure Category and Name	% Program Savings (kWh)	% Program Savings (Cumulative kWh)
Schedule AHU for Space	26%	26%
Economizer and Outdoor Air Control	15%	42%
Duct Static Pressure Reduce/Reset	14%	56%
Chilled Water Temperature Reset	8%	63%
Supply air temperature reset	7%	71%
Balance airside	4%	75%
Schedule Heaters	4%	79%
Schedule Fan Powered/VAV Boxes	3%	82%
Reduce Ventilation	3%	85%
Condenser water temperature reset	3%	88%
Optimize supply fan performance	3%	91%
Schedule Lighting	3%	93%
Reduce VAV Minimum Position	2%	96%
Setback Space Temperature	2%	98%
Optimum Start for AHU	2%	100%

Retro-Commissioning Pilot Program Overview



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Natural Gas ECMs and Energy Savings		
Measure Category and Name	% Program Savings (Ccf)	% Program Savings (Cumulative Ccf)
Schedule heaters	15%	15%
Schedule AHU for space	13%	28%
SAT Reset	11%	39%
Balance airside	8%	47%
Setback space temperature	7%	54%
Schedule fan powered/VAV boxes	7%	61%
Economizer and OA control	7%	68%
Option Start for AHU	4%	72%
Repair/replace dampers	3%	75%
CO-based ventiation control	2%	77%
Optiimize snowmelt system	2%	79%
Schedule return/exhaust fan	2%	81%
Reduce ventiation	2%	83%
Repair econmizer	2%	85%
Demand control ventliation	2%	87%



Sample RCx Standard Projects

Building Type	Office	Hospital	Education
Building Area	166,000 sq ft	390,000 sq ft	760,000 sq ft
Annual kWh	3,498,000	15,540,000	9,214,000
Implement Cost	\$14,500	\$17,100	\$6,000
Verified kWh Saved	763,850	268,000	231,400
Verified Therms Saved	0	9,510	8,890
T Annual Savings	\$68,740	\$31,980	\$24,030
Payback (Yrs.)	0.21	0.54	0.25



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Service Provider Network



Current RCx Pilot Program Service Provider Network

Trade Ally Company Name	Contact Name	Address	Phone Number	Contact Email	Company Website	Types of Service
edss Energy Design Service Systems	David Ely	7892 W. Grand River Brighton, MI 48114	810-227-3377	davidely@msn.com	www.edssenergy.com	RCx Lite, RCx Std
Energy Sciences Resource Partners, LLC	Shelley Sullivan	725 S. Adams Rd., Ste. 227 Birmingham, MI 48009	248-792-9287	shelley@esciences.us	www.EnergySciencesLLC.com	RCx Lite, RCx Std
Newman Consulting Group, LLC	James L. Newman	31134 Harmony Lane, Suite 100 Farmington Hills, MI 48331-3136	248-626-4910	jimn@ncgconsulting.us.com	www.newmanconsultinggroup.us	RCx Lite, RCx Std
Peter Basso Associates, Inc.	Andrew F. Luzenski, PE, LEED AP	5145 Livernois Road Troy, MI 48098	248-879-5666	aluzenski@pbanet.com	www.peterbassoassociates.com	RCx Lite, RCx Std
Pure Eco Environmental Solutions	Ryan E. Oswald, LEED AP	1397 Piedmont, Suite 100 Troy, MI 48083	866-270-2370	roswald@pureeco.com	www.pureeco.com	RCx Lite, RCx Std
Stantec Architecture	Scott McCullough	2338 Coolidge Highway Berkley, MI 48072	248-336-4784	scott.mccullough@stantec.com	www.stantec.com	RCx Lite, RCx Std



Role: Service Provider

- Best fit for **RCx Std**
- **Conduct energy assessment**
 - Establish & document baseline performance
 - D&C Plans: seq of ops
 - Trend data, data logging
- **Verify implementation**
- **Report Templates**
 - Investigation Report
 - Customer Selection Form (CSF)
 - Verification Report
- **Project leader**

Role: Trade Ally and Service Provider

- Best fit for **RCx Lite**
- **Conduct energy assessment**
 - Establish & document baseline performance
- **Verify implementation**
- **Report Templates**
 - Customer Selection Form (CSF)
 - Verification Summary
- **Project leader**



Questions





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Thank You!

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